

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

130694.02801

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on _____

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Application Number

10576481

Filed

May 15, 2008

First Named Inventor

Zissimos Mourelatos

Art Unit

1635

Examiner

Dana H Shin

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
☐ assignee of record of the entire interest.
 See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
 (Form PTO/SB/96)

☒ attorney or agent of record. 52201
 Registration number _____

☐ attorney or agent acting under 37 CFR 1.34.
 Registration number if acting under 37 CFR 1.34 _____

/Daniel M. Scolnick, Reg. No. 52,201/

Signature

Daniel M. Scolnick

Typed or printed name

610.640.7820

Telephone number

November 22, 2010

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
 Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Zissimos Mourelatos *et al.*

Application No.: 10/576,481

Group Art Unit: 1635

Filed: May 15, 2008

Examiner: Dana H. Shin

Confirmation No.: 6145

Title: SHORT INTERFERING RNA AND MICRO-RNA COMPOUNDS AND
METHODS OF DESIGNING, MAKING AND USING THE SAME

Mail Stop: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL CONFERENCE REQUEST AND NOTICE OF APPEAL

Dear Sir:

This Pre-Appeal Conference Request and Notice of Appeal are being submitted in response to the Final Office Action dated June 25, 2010. **The period to respond is extended by petition and payment of the appropriate fee provided herewith.** Applicants respectfully request withdrawal of all rejections in view of the comments herein.

REMARKS

The Office has made clear error in maintaining the rejections and declining the priority claim to U.S. Provisional Application No. 60/513,489. Applicants hereby incorporate by reference the response filed April 13, 2010 and respectfully request that the members of the Pre-Appeal Conference review the response for further detailed analysis that could not be included herein due to the page limits for a pre-appeal conference request.

I. *Priority*

The presently claimed invention is entitled to priority to U.S. Application No. 60/513,489 under 35 U.S.C. § 119(e) because the '489 application satisfies the requirements of 35 U.S.C. § 112 for the presently claimed invention.. The Office alleges that "all the limitations must appear in the specification." Applicants respectfully assert that the Office is requiring more than the law requires. The '489 application must explicitly or implicitly describe and enable the presently claimed invention. The '489 satisfies the requirements of 35 U.S.C. § 112, first paragraph, for the presently claimed invention and, therefore, the objection to the priority claim should be withdrawn.

The '489 application describes and enables the presently claimed invention. To satisfy the written description requirement, the '489 application must disclose sufficient material that one of skill in the art could immediately envisage the claimed invention. The '489 application supports a method of identifying a uniquely targeting siRNA. For example, the '489 application teaches one of skill in the art how to design siRNAs with high specificity. The '489 application states, "In order to design siRNAs with high specificity, and to avoid off-target effects, these nucleotides should not share homology with any mRNA but the one that is targeted." ('489 application, p. 7, last sentence). Therefore, one of skill in the art would understand that the '489 application discloses a method of how to identify (design) a siRNA.

The specification also provides adequate support for the step of comparing as it is recited in claim 1. The Office alleges that "There is nothing that provides adequate written description for "comparing a database of mRNA sequences" Applicants respectfully disagree. The specification states that the siRNA should not "share homology with any mRNA but the one that is targeted." ('489 specification, p. 7). One of skill in the art would understand that this would involve comparing the propose targeted sequence with a database of mRNA sequences otherwise there would be no way of knowing that the mRNA does not share homology with any mRNA but the one that is target. The Office's apparent requirement that the '489 application use the exact language that is now used in the claims is improper and contrary to long-standing precedent.

The '489 application also discloses the use of the 11 nucleotides including the third from an siRNA nucleotide sequence's 5' end. For example, the '489 application states at page 7, "that the critical determinant of siRNA specificity ... are the nucleotides shown in Figure 4." Figure 4 shows a sequence that is complementary to 11 nucleotides, starting at the third nucleotide of the siRNA molecule. The specification describes Figure 4 as describing the "Minimal requirements for target RNA recognition and cleavage by mi/siRNAs." The figure shows the 11 "nucleotides ... that are critical for target recognition and cleavage are shown base-paired with the target RNA nucleotides." ('489 specification, p.14). Therefore, the specification provides sufficient description of the presently claimed invention. The Office's interpretation of the '489 application is not as one of skill in the art would read the application. In contrast to the Office's interpretation, one of skill in the art would immediately be able to envisage the presently claimed invention based upon the '489 application's specification. Nothing more is required and the '489 application satisfies the requirements of 35 U.S.C. § 112.

The specification also adequately describes and enables the determining step as it is recited in claim 1 and that the "absence of one or more additional mRNA sequences in the database that are complementary to an 11 consecutive nucleotide sequence of the siRNA nucleotide sequence including the third nucleotide from the 5' end of the siRNA nucleotide indicates that the siRNA nucleotide sequence is a uniquely targeting siRNA nucleotide sequence. For example, the specification states that "siRNAs with high specificity ... should not base-pair with any mRNA but the one to be targeted." ('489 specification, p.14). One of skill in the art would understand that to confirm whether or not the siRNA would not base-pair with any mRNA but the one to be targeted would require determining if other than the target mRNA there are additional mRNAs in a database that are complementary. Although the exact language of the claims is not used in the '489 application the method is clearly disclosed. The '489 application discloses the requirements of identifying a unique siRNA and all that the present application provides is other embodiments of what was already described in the '489 application. The '489 application discloses a method of identifying a uniquely targeting siRNA as it is presently claimed.

The Office has failed to present any evidence as to why the '489 application has not enabled the presently claimed invention. Nothing more than routine experimentation would be required to practice the methods disclosed in the '489 application. Using databases to compare sequences is routine in the art. The present application provides the parameters to be used in the

comparison. One of skill in the art reading the '489 application would understand that the parameters includes comparing at least 11 nucleotides including the third nucleotide from the 5' end of the siRNA nucleotide sequence. Accordingly, the present application is entitled to priority to the '489 application under 35 U.S.C. § 119(e) In view of the foregoing, Applicants respectfully request that the Office declare that the priority claim is proper.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-6, 10, 13, 48-52 are not anticipated under 35 U.S.C. § 102(e) by Liu *et al.* (U.S. Publication No. 2004/0091926 A1). Liu fails to anticipate the presently claimed invention because it is not prior art. As discussed above, the presently claimed invention is entitled to the filing date of the '489 application. The filing date of the '489 application is October 22, 2003. Therefore, the effective filing date of the present application is at least October 22, 2003. The priority date of Liu is October 24, 2003, which is two days after the effective filing date of the present application. Accordingly, Liu is not available as prior art against the present application.

Even if Liu were available as prior art, Liu still fails to anticipate the presently claimed invention because Liu does not explicitly or inherently teach each and every element of the claims. For a reference to anticipate a claim the reference must teach each and every element as it is arranged in the claim. Liu fails to disclose all the elements of claims. For example, Liu fails to disclose or suggest comparing or identifying a uniquely targeting siRNA that includes a step of comparing or identifying at least 11 consecutive nucleotides complementary to the target mRNA sequence including the nucleotide that is third from an siRNA nucleotide sequence's 5' end.

Liu discloses other methods of selecting siRNAs. Although, the resulting siRNA selected by Liu may be equivalent to the siRNA identified by the presently claimed invention, the presently claimed method of identifying the siRNA is completely different. Liu does not disclose or suggest a step of comparing or identifying at least 11 consecutive nucleotides complementary to the target mRNA sequence including the nucleotide that is third from an siRNA nucleotide sequence's 5' end. The Office alleges that because the claim uses the term "at least" that the Liu reference therefore inherently anticipates the presently claimed method. (See, Final Office Action, p6). However, there is nothing in the Liu reference that specifically directs the skilled artisan to ensure that the 11 nucleotides includes the third from the siRNA nucleotide sequence's 5' end. The Office's rejection is based upon Liu's statement that the sequence should be 100% identical, and, therefore, Liu inherently discloses this step. However, to anticipate the

presently claimed invention one of skill in the art must actively perform every step, which Liu does not teach. The Office's allegation that "Hence, not only the method steps but also the resulting product of a uniquely targeting siRNA molecule are taught by Liu et al." confirms that the Office is not just comparing the steps but also includes the final product in its analysis. (Final Office Action, p. 6) Many methods can result in the same final product and it is the method steps themselves that must be compared not the end result. The Office has failed to point to anywhere in Liu that discloses all the elements of the presently claimed invention. Therefore, the Liu reference fails to anticipate the presently claimed invention. In view of the foregoing, Applicants respectfully request that the rejection under 35 U.S.C. § 102(e) be withdrawn.

Claims 1-6, 13, and 48-51 are not anticipated under 35 U.S.C. § 102(b) by Elbashir *et al.* (Methods, 2002, 26:199-213). Elbashir fails to anticipate the presently claimed invention because Elbashir fails to disclose comparing a database of mRNA sequences from the target species with an siRNA nucleotide sequence that consists of 18-25 nucleotides including at least 11 consecutive nucleotides complementary to the target mRNA sequence to be cleaved by the siRNA nucleotide sequence, wherein the at least 11 consecutive nucleotides complementary to the target mRNA sequence include a nucleotide that is third from an siRNA nucleotide sequence's 5' end (claim 1); or identifying an siRNA nucleotide sequence for the target mRNA, said sequence consisting of 18-24 nucleotides including a nucleotide sequence that has 11 consecutive nucleotides, including the third nucleotide from the siRNA nucleotide sequence's 5' end, that are complementary to an 11 nucleotide sequence that occurs on the target mRNA molecule (claim 2). As discussed above with reference to Liu, Elbashir also fails to teach or suggest a method of identifying a siRNA sequence that includes a step of comparing or identifying at least 11 consecutive nucleotides complementary to the target mRNA sequence including the nucleotide that is third from an siRNA nucleotide sequence's 5' end. Elbashir only refers to consecutive nucleotides but never makes reference to the third nucleotide from the sequences 5' end. Therefore, Elbashir fails to teach each and every element of the claim.

Accordingly, Elbashir fails to anticipate the presently claimed invention. In view of the foregoing, Applicants respectfully request that the rejection under 35 U.S.C. § 102(b) be withdrawn.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-6, 10, 13, and 48-52 are not obvious under 35 U.S.C. § 103(a) over Elbashir *et al.* in view of Tuschl *et al.* (WO 03/099298), Martinez *et al.* (Cell, 2002, 110:563-574) and Ureta-

Vidal *et al.* (*Nature Reviews Genetics*, 2003, 4:251-262). The combination of references fail to render the presently claimed invention unpatentable because the combination does not yield the presently claimed invention. As discussed above Elbashir fails to teach or suggest comparing a database of mRNA sequences from the target species with an siRNA nucleotide sequence that consists of 18-25 nucleotides including at least 11 consecutive nucleotides complementary to the target mRNA sequence to be cleaved by the siRNA nucleotide sequence, wherein the at least 11 consecutive nucleotides complementary to the target mRNA sequence include a nucleotide that is third from an siRNA nucleotide sequence's 5' end (claim 1); or identifying an siRNA nucleotide sequence for the target mRNA, said sequence consisting of 18-24 nucleotides including a nucleotide sequence that has 11 consecutive nucleotides, including the third nucleotide from the siRNA nucleotide sequence's 5' end, that are complementary to an 11 nucleotide sequence that occurs on the target mRNA molecule (claim 2). The remaining references fail to cure this deficiency. None of the references discuss or suggest the importance of the third nucleotide from the 5' end of the siRNA nucleotide sequence. Accordingly, even if the references are combined the combination does not yield the presently claimed invention. The presently claimed invention requires either a step of comparing or identifying at least 11 consecutive nucleotides complementary to the target mRNA sequence including the nucleotide that is third from an siRNA nucleotide sequence's 5' end. There is nothing in the references, alone or in combination, that discusses either of these steps.

Accordingly, the presently claimed invention is not obvious because the combination fails to yield the presently claimed invention. In view of the foregoing, Applicants respectfully request that the rejection under 35 U.S.C. § 103 be withdrawn.

Conclusion

Claims 1-5, 10, 13, and 48-50, and 52 are in condition for allowance. A notice of allowance is earnestly solicited. The Commissioner is hereby authorized to charge any deficiencies of fees and credit of any overpayments to Deposit Account No. 50-0436.

Respectfully Submitted,

/Daniel M. Scolnick, Reg. No. 52,201/

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Dated: November 22, 2010
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